

The Dead Sea is Dying

Even the most spiritual of pilgrimages rarely pass it by: bathing in the Dead Sea. It is a unique experience, to be sure. But playtime is over, the school bell has rung; the Dead Sea is disappearing. Nevertheless, there is no shortage of projects aimed at saving this natural wonder.

“At 412 meters below sea level, the Dead Sea...” So begins a lovely story. “400 meters below sea level” is an easy number for tou-

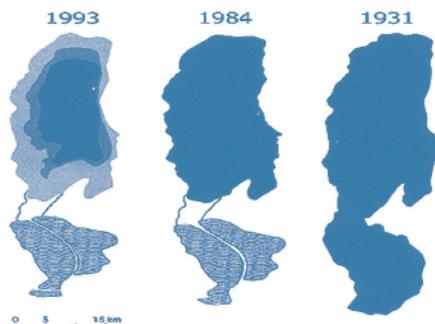
rists to remember, 412 meters is the number that was indicated by a scientific article in 2003; in 2006, one would have to say at least 415. It is not a problem of measurement: the Dead Sea is losing altitude.

WHEN WAS THE DEAD SEA BORN?

(12)

The Dead Sea is located on a tectonic rift that extends from Turkey to Mozambique in Eastern Africa. Although scientists claim it is 40 to 50 million years old, their opinions differ as to the birth of the Dead Sea itself, somewhere around the passage from the tertiary to the quaternary geological age; that is, about two million years ago. They agree, however, in saying that there was a sea extending from south of today's Dead Sea to the foothills of Lebanon. This sea was the result of the retraction of the Mediterranean in the region.

So, why so much salt? The evaporation of this sea contributed to the saturation of the salt that remained. But researchers are still seeking the definitive answer. Today living subterranean springs continue to pour salt water into the Dead Sea, one of which (at the foot of Mount Gomorra) has the same salt density as the Dead Sea. It's a little like the chicken and the egg: who was salty first?



Over the last thirty years, it has lost 25 meters, the height of a 10-story building. It is not sinking, but evaporating. At the present rate of 2 billion cubic meters—almost a meter of depth—a year, the sea will have evaporated by the year 2050.

The Dead Sea today consists of two water tables. The northern table has a maximum depth of around 300 meters. The southern lake is quite shallow, only 10 meters, and has not



© EITAN SIMANOR

yet evaporated because it benefits from careful attention on the part of the industries who exploit it.

The most ancient pilgrims would not recognize the site today. As much as 20 years ago, the narrow peninsula that divides the sea at the 2/3 mark, had already become a large swath of soil and salt that might be traversed on foot, if it were not the border between Israel and Jordan.

The saddest part of this steady disappearance is that it is not due to earth's crust, nor yet to evaporation.

In this basin where daily temperatures reach 40 degrees Celsius and can even climb into the fifties – on nice days! – we can't blame the water for evaporating. Even tourists would sometimes prefer to avoid this inferno when it is "only" 30 degrees in winter... Of course, rainfall is not what it once was, and the entire

region feels the effects. But that is still not the point.

The 1930s, years of folly

The Dead Sea is disappearing, not by accident or fate, but at human hands. Since the middle of the 19th century, there has been talk of a canal that would feed the Dead Sea. At that time, the emphasis was not so much on feeding the sea as on using the sharp descent between the Mediterranean and the Salten Sea to build a hydroelectric plant.

But it was the 1930s that sounded the death knoll of two million years of peaceful history. There was no question of sustainable development when the first plants were installed at the north in 1930, quickly to be followed by the ones at the south in 1934; the latter are still in use.

(13)

Dentelle de sel formant des piscines d'évaporation, au loin des hôtels.

© EITAN SIMANOR

(14)

Nor was there appropriate land management when the population of Palestine began to swell; even less so upon the creation of the State of Israel.

No common agricultural policy, when irrigation became the keyword of agriculture.

No ecologists leaping into the fray to restrain, if not stop, a perniciously expanding tourist industry.

No peace to allow the three countries involved (Israel, Jordan and Palestine, border the Sea) to sit down together and finally say, "Let's stop this disaster!"

These are the developments that together are bringing the life of the Dead Sea inexorably to an end.

Water Diversion

The meanest blow is the diversion of water. Until the 1930s, the influx

of water from the Jordan River, the principal river feeding the Dead Sea, was able practically on its own to compensate for water loss due to evaporation. However, it has its sources in the Litani, which flows in Lebanon; the Banyas, of Syrian origin; and the Dan, whose source is in Israel. Water, the treasure of the Middle East, is necessary for everything, is the desire of all appetites, is the tool of all pressure politics.

The Jordan no longer spills into the Sea of Galilee as vigorously as once it did; the Jordan that leaves the Sea is not vigorous at all.

A couple of kilometers south of the Sea of Galilee virtually all of its water is diverted for the needs of the Israeli population of the Galilee and or for its agriculture. If there is still any water left in the Jordan riverbed a bit further south, it is principally

waste water; that is, water that has already been used, treated of course, but not potable.

“Principally”, but not exclusively, because the Yarmouk River flows down the slopes of the Jordanian Mountains of Moab, marking the border between Syria and Jordan; however, a hydraulic dam retains the water. Here again, the little that remains is used mostly for irrigation. All along the 360 kilometers of the river, this is the case, be it in Jordan, Israel or Transjordan, the territory destined to belong to a Palestinian

State: dams and irrigation leave the river, if not dry, at the very least in a very sad condition.

There are also wadis and springs abutting the Dead Sea, but these are no longer adequate to feed it. Everyone knows this.

Whatever the political situation of the region, the water needs of the population remain. And the Jordan River is the “motherlode” of fresh water.

So what can be done for the Dead Sea?

The struggle for its continued existence is not just an ecological fad. It is in the interest of everyone, and the ecologists are not just spoilsport troublemakers. They truly are “friends of the earth”. The industries, tourism and local economies that the Dead Sea has brought into being will be digging their own graves if they don’t act. ►►►

(15)

THE NAMES OF THE DEAD SEA

The name “the Dead Sea” has its origins in the Roman period and appears to have been intended to indicate that there are no fish or seaweed in it.

Some people attach the name to the misadventures of Lot’s wife and Sodom and Gomorra because before this Biblical episode the region is described as fertile (Gen. 13: 10).

The Greeks called it the Asphalt Lake because of the bitumen plates that were found and exploited there.

For the Hebrews, it has four names: the Salten Sea, the Sea of the Arava, the Sea of the Plain and the Eastern Sea.

The Arabs still call it Bahr Lot, the Sea of Lot.



A History-filled site

The most ancient traces of human occupation in the Dead Sea basin date to about 10,000 years ago, putting us in the early Neolithic period.

The Biblical episodes in the life of Abraham, especially the destruction of Sodom, take place some 2000 years before Jesus Christ.

Around 1300 BC the Hebrews came to the mountains of Moab, from where Moses could see the Promised Land, not entering it, but dying by the kiss of God on Mount Nebo.

Toward 700 BC a colony of Israelites built a small fortress at the famous site of Qumran (abandoned in 600). It is here that the Essene sect settled much later (in the middle of the second century before Christ.)

A Region that has Never Been Deserted

During the time of Jesus, the Qumran site, like that of Jericho, was a central commercial crossroads in the Oriental trade developed by the Nabateans. Herod the Great had several palaces built in the area: one on the eastern bank, Machaerus, which is probably the site where his son Herod Antipas had John the Baptist executed. (He had been baptizing not far from there.) The other was at Massada, where two centuries earlier, towards 150, the Maccabe leader Jonathan had established a fortress.

It was here that the zealots took refuge after the destruction of the Temple in Jerusalem by Titus in the year 70 of our era, and it was here that they faced off the Roman army for three years.

During the Byzantine period, the monks controlled approaches to the Dead Sea from the west; the Crusaders later built Karak in what is today Jordanian territory.

Although pilgrims and tourists simply pass through what seems to them an infernal desert, throughout history and even today there are been populations that have been living in and bringing life to this exceptional region.

(16)



Une des grottes de Qumrân

Au crépuscule,
les usines
de potasse
de Sodom.

© EITAN SIMANOR



Tourism and Industry

Dead Sea-related tourism is well known. There is the bathing and the incredible discovery that you float! People seeking health cures who spend time in one of the thermal stations can also enjoy mud baths. The beneficial qualities of Dead Sea mud can no longer be questioned, though rheumatism, psoriasis and other skin disease can always be persistent. Even the air, thanks be to a God whom no one has yet diverted, is in the touristic mix. The level of oxygen here is significantly higher than average, to the delight of asthmatics. Dead Sea tourism employs 11,000 people serving 5,500 hotel rooms, but there are projects for another 50,000 rooms.

Industry is older. The density of mineral salts in this water is ten times higher than that of other seas. One liter of water contains, on the average, 212 g of chloride, 40 g of sodium, 38 g of magnesium, 16 g of calcium, 7 g of potassium and 5 g of bromide, to which must be added sulfate, bicarbonate, alu-

minum chloride, ammonia, silicic acid, iron oxide... In short, a delight for chemists and a fortune for the industrialists who every year exploit 2,700,000 tons of potassium coming out of their plants, along with 200,000 tons of bromide, 100,000 of magnesium chloride and 25,000 of magnesium metal: financial manna for Jordan and Israel. The counterbalance is the 25 million tons of water necessary for the industrial processes, pumped out of the Dead Sea itself or, even worse, out of the aquifer layers that surround it.

Communal Projects

Friends of the Earth International (see sidebar page 20) and its Middle East section are working to raise the consciousness of the world and its decision makers. The latter, in any case, have not tarried in envisaging solutions. Two projects are regularly invoked to save the Dead Sea. Both involve building a canal that would carry water, be it from the Mediterranean or the Red Sea. These canals, benefiting from the land slope could also feed hydraulic works.

There is no shortage of studies for projects that, in spite of the millions

(17)



Un acacia du désert. Au loin, le rocher de Massada.

© EITAN SIMANOR

(18)

of dollars spent – 18 million alone for the creation of the Med-Dead Sea Company (1983), never get off the ground. But the 1.5 to 5 billion dollars necessary to build a canal (quite a range!) even if aided by the World Bank's development project for the Jordan Rift, cools enthusiasm in an ambiguous political context. Not hard to understand.

A canal to feed the Dead Sea... Looks simple, and in fact would not be difficult if not for the fact that the Dead Sea needs a supply of fresh water! Yes, indeed: the Middle East does nothing like the rest of the world!

A World Heritage

The saltiest sea in the world has developed its own ecosystem, for which fresh water is vital. To tell the truth, the massive influx of water

via a canal coming from another sea that is salty, but much less so (3% for an ocean, as opposed to 26% for the Dead Sea), could create a chemical reaction that would bring about the creation of a film between the types of water, and God only knows how much time it would take for the waters to mix. And even if they were to mix within a reasonable period of time, there is no guarantee that the ecosystem would remain unchanged. There is, therefore, no guarantee that the special characteristics of the Dead Sea would remain unchanged in terms of its thermal and touristic, as well as its industrial, qualities.

The Friends of the Earth are sounding the alarm so that the solution will not be worse than the problem. Bringing Israelis, Palestinians and Jordanians together, they consider the question as a whole: ►►►

Did you say marmot?

At first approach, the place looks isolated and utterly deprived of any form of life. Not a bit of it! The flora and fauna are well and truly alive in this basin that has developed its own ecosystem.

The Dead Sea belongs to a whole. Within this massive natural depression are found saltwater hot springs, as well as freshwater oases that seem cool in relation to the ambient heat. The dry salt cave cuddles up to the green oasis. In this context, nature is not at rest.

Fish, Fowl and Other Creatures

There are 25 distinct species of reptiles and amphibians in the Dead Sea area. Goatfish and mullet thrown into the open basins on the western bank have acclimatized very well. To the east, there is a freshwater fish, the Gara goremensis, which passes its quiet days in the Moujib basin. The Ein Feshha or Ein Gedi oasis, which borders the Salten Sea, even protects certain species of

fish in danger of extinction and invites numerous insects and birds to live the life of Riley, since it is on an important migration route, to the tune of 500 million migratory birds per year.

Wild Animals and Microbes

In the protected nature reserves of Nahal Arugot and Nahal David, the trained eye can pick out ibex, mountain badgers and hyraxes, a marmot from the same family as... elephants!

If life within the Dead Sea itself does not exist in animal form, it does exist at the micro-organic level of bacteria, of which one, Halbacterium is of particular interest to NASA researchers. Its natural capacity to repair DNA has made it useful in the treatment of certain types of cancer. However, even these micro-organisms suffer and waste away in the current evaporation and densification of salts.

(19)



▶▶▶ A geographic entity that is not concerned with borders, even though the association involves the three bordering countries. An environmental whole, at the heart of which the balance between the needs of mankind and the needs of nature must be sought. Agriculture, tourism and industry are considered with nature and for it. Harmony is possible for the good of all.

WORK WITH FRIENDS OF THE EARTH

Friends of the Earth International was born in the USA in 1970, but very quickly put out shoots throughout the world. In 1994, Friends of the Earth for the Middle East was created. Its name expresses its ability to transcend political cleavages in the service of preserving humanity's common good: the earth. The Friends of the Earth Middle East (FoEME) brings together Palestinians, Israelis and Jordanians.

(20)

Together, they wish to promote a durable, peaceful development project in the region. Since the group's inception, the Dead Sea has been one of their major causes; they number among the most expert specialists in the subject.

Their accomplishments can be discovered and help (including financial contributions) offered by contacting www.foeme.org or writing to

Mr. Gidon Bromberg, Nahalat Binyamin 85, Tel Aviv 66102, Israel;
or Mr. Munqeth Mehyar, PO Box 9341, Amman 119, Jordan;
or Mr. Nader Khateb, PO Box 421, Bethlehem, Palestine.

E-mail contact can be made at info@foeme

Utopia? No. The concept proposed by Friends of the Earth already exists: Preservation of the Biosphere.

The Dead Sea basin would be delimited, not as a protected preserve where no one can move their little finger, but as an integral ecological zone that must not destroy the development perspectives that it permits.

There are three zone-types within a single space: protected zones reserved for good natural development, buffer zones for eco-tourism and transitional zones for agricultural, touristic and industrial development.

And the water in all this? Where does it come from? The ideal would be to tackle the problem at its source, the Jordan River: care for it, be economic in using its waters. The idea of a canal from one of the seas is not



CARTOGRAPHIE: © EcoPeace/FoEME

excluded; the Red Sea project seems to be leading the race and Jordan is promoting discussion of it – but the water must be desalinated.

Desalinization of water, moreover, is one of the keys to the whole question of water in this part of the world. Production costs are dropping, techniques are becoming ever better, and the need is there.

What is sure is that it will take seven years to build a canal. Seven years – that will be a loss of seven or eight more meters.

It is long past time to get moving. On June 22, 2006, Shimon Peres and King Abdallah of Jordan lengthily developed the question of the future of the Dead Sea. For the last few years, it has been the “elephant

in the parlor” of Israelo-Jordanian summits.

Solutions exist, even good ones. They are onerous, yes. But the long-term benefit would be proportionately profitable. Time is of essence, as it is for peace in the region. But together Israelis, Jordanians and Palestinians can learn to discuss, to negotiate, to share, to invent. They can turn a joint Dead Sea project into a testing ground for peace. Then the Dead Sea would be resurrected and with it, new hopes for peace. ■

MARIE-ARMELLE BEAULIEU
marie-armelle@custodia.org

PHOTOS : EITAN SIMANOR
esimanor@gmail.org

